

TITLE Assessing the California Transfer Function: The Transfer Rate and Its Measurement. Conclusions of the Data Needs Task Force.
 INSTITUTION Intersegmental Coordinating Council, Sacramento, CA.
 PUB DATE Feb 92
 NOTE 18p.
 PUB TYPE Reports - Evaluative/Feasibility (142)
 EDRS PRICE MF01/PC01 Plus Postage.
 DESCRIPTORS College Credits; *College Transfer Students; Community Colleges; Data Collection; *Definitions; Higher Education; *Research Methodology; State Universities; *Statewide Planning; *Transfer Policy; Transfer Programs; Two Year Colleges; Two Year College Students
 IDENTIFIERS *California; *Transfer Rates (College)

ABSTRACT

In the fall of 1989, the Intersegmental Coordinating Council organized the Data Needs Task Force (DNTF) to determine the feasibility of establishing a transfer rate definition. Specifically, the DNTF was charged with defining the information needed to strengthen intersegmental transfer programs, establishing common definitions (including "transfer student" and "transfer pool"), and reaching agreement on a method for computing a transfer rate. The DNTF evaluated different transfer rate methodologies based on four measures of validity: construct validity; group equivalence; time equivalence; and maturation validity. The longitudinal Transfer Assembly rate specified by Cohen and Brawer (1990) was judged the most useful. Despite the Transfer Assembly rate's high ranking, however, two concerns emerged one in regard to maturation validity and the other in regard to construct validity. The DNTF modified the Transfer Assembly rate to develop the "California Consensus Methodology" (CCM). The CCM follows a cohort of students who entered the California Community Colleges (CCC) as first-time freshmen and earned six or more University of California (UC) or California State University (CSU) transferable units during their first college year. As a component of the CCM, intent-to-transfer among this freshman cohort will also be measured. The CCM will not measure the following: students moving from senior institutions to community colleges; students who transfer into the CCC; and students defined by the four-year institutions as first-time freshman entrants or transfers from other institutions. Appendixes provide alternative measures of the transfer function, a list of DNTF members, and CSU and UC definitions of a transfer student. (JMC)

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ED346896

Assessing the California Transfer Function:
The Transfer Rate and Its Measurement

Conclusions of the Data Needs Task Force

Intersegmental Coordinating Council
February 1992

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FOREWORD

In the fall of 1989, the Intersegmental Coordinating Council (ICC), the administrative arm of the California Educational Round Table, undertook the task of determining the feasibility of establishing a transfer rate definition. This action was taken in response to the ongoing review of California's Master Plan and recommendations made by the California Postsecondary Education Commission (CPEC). To address this subject, the ICC organized a Data Needs Task Force to report to standing committees of the ICC and the ICC itself. Task Force members include representatives from the California Community Colleges, the University of California, the California State Universities, and California independent institutions.

The pages which follow describe the consensus methodology developed through the Task Force and endorsed by the segmental representatives and members of the ICC. It is based upon the reports of the Task Force which are technical in nature and which reflect an iterative process of exchanging ideas and information.

The Data Needs Task Force continues to develop the implementation plan for the methodology described herein. The group also is also considering other research questions and the data required to answer such questions. As it proceeds in its efforts, the Task Force will continue to report to one of the two current standing committees of the ICC (the Progress of Students Committee), and to the ICC itself. This process assures maximum exposure to the issues surrounding data collection on a statewide and systemwide basis. The structure contributes to the goal of full understanding and broad support of what is being proposed and implemented.

It is hoped that this document will help campus and system leaders understand what is implied by the transfer rate termed herein, the "California Consensus Methodology". At the same time it is intended that this report will serve as an introduction to more technical discussions and documents which will be of interest to institutional and academic researchers. Since California Community Colleges enroll some 25% of all community college students nationally, the implications of this monitoring system will be significant for other areas of the country.

Members of the ICC wish to thank all of those who have contributed to the work of the Data Needs Task Force over the past three years. The names of those individuals are listed in Appendix B.

ASSESSING THE CALIFORNIA TRANSFER FUNCTION: THE TRANSFER RATE AND ITS MEASUREMENT

Introduction

Recent attention to the issue of student transfer between community colleges and universities, both nationally as well as in California, has highlighted the importance of careful study and research into the transfer process. For example, the 1991 American Council on Education report, Setting the National Agenda: Academic Achievement and Transfer states: "Though transfer is tied to the compelling issues of social justice, accountability, and achievement, research into the scope of transfer activity and the correlates of successful transfer is still at a pioneering stage." The lack of data that is collected consistently according to standard definitions makes it difficult to analyze trends in transfer. Central to the research agenda is the establishment of a benchmark transfer rate. This report is directed to that issue.

Despite growing awareness across the country that statements of transfer rates can serve the transfer function, there has been little movement toward consensus on methods for generating standardized rates. This is understandable given the number of community colleges, the wide variety of students served, the different roles played by community colleges from state to state, and the difficulty of collecting comprehensive data over time.

Major developments have occurred recently within California which underlie the need for more sophisticated and comprehensive data collection about the transfer process. Most importantly, the report of the Master Plan Review Commission in 1987, The Master Plan Renewed, identified the transfer function as a "central institutional priority" for all public segments of higher education in California.

Over the past several years the segments have initiated several intersegmental programs to improve transfer including the Transfer Center program to assist individuals, especially those from underrepresented groups and re-entry students, in pursuit of transfer objectives; the Articulation System Stimulating Interinstitutional Student Transfer (PROJECT ASSIST), a computer based advising tool; and the California Articulation Number system (CAN), a common course numbering system for transfer course work. The segments have also adopted an intersegmental general education program, known as the Intersegmental General Education Transfer Curriculum (IGETC) which community college transfer students can use to fulfill lower division general education requirements at any CSU or UC campus.

Underlining the need for improved data on the transfer function is the recently enacted Senate Bill 121 by State Senator Gary Hart, which became effective in January 1992. This legislation, which in great measure flowed from The Master Plan Renewed report, is designed to improve the academic preparation of community college students, enhance transfer services in both two-year and baccalaureate institutions, and ensure that high priority is placed on increasing the transfer rate among underrepresented ethnic populations. The statute also emphasizes the importance of regular evaluation and the effectiveness of the transfer function.

Of particular importance is the fact that recent developments in the statewide student data collection system for the California Community Colleges enable the collection of uniform student data which can be linked to data collected by four-year institutions to produce transfer information heretofore unavailable. It is now possible to address aggregate and comparative data issues across segments.

Over a three year period, representatives of the institutions and systems of higher education, public and private, under the auspices of the Intersegmental Coordinating Council, have worked as the "Data Needs Task Force" to address practical questions such as these:

- What type of transfer information is of greatest value to the segments, State legislators, the California Postsecondary Education Commission (CPEC), and others involved in the development and evaluation of public policy?
- What measures would best support evaluation and accountability studies of the transfer function?
- What are the obstacles to comprehensive data collection, data comparability, and data sharing across the segments in higher education?

Specifically, the Data Needs Task Force was charged with defining the information needed to strengthen intersegmental transfer programs, establishing common definitions (including "transfer student" and "transfer pool"), and reaching intersegmental agreement on a method or methods for computing a transfer rate.

In addressing this topic it was apparent to those engaged in the task that there is a pressing need for an informative and understandable transfer rate statement. Such a statement would have to encompass a "transfer pool" that best represents students with transfer potential. The transfer pool should be monitored periodically and ultimately compared to actual transfers to four-year institutions in California and transfers who attain their baccalaureate objectives.

The methodology described in this report as the California Consensus Methodology has been agreed to by the California Community Colleges (CCC), the University of California, the California State University, and the Association of Independent Colleges and Universities (AICCU). With the advent of intersegmental agreements on transfer data collection and analysis, California will be the first state to provide consistent monitoring of the transfer function between its community colleges, public baccalaureate institutions, and selected independent universities.

Defining a Transfer Rate

The work group realized the importance of taking into consideration that the private and public baccalaureate systems and institutions in California employ somewhat differing student classifications, and that these differences can obscure what is happening in the flow of students between segments. There was also a need to consider the open-admission nature of the California Community Colleges which welcomes students with transfer potential, as well as

students with vocational objectives, students with short-term academic goals, or students who are not fully prepared to undertake a transfer curriculum yet who desire to complete a baccalaureate degree.

After extended discussion, the group concluded that no single statistical indicator could tell the complete story of how the transfer function operates within California and that it was unlikely that any methodology could completely discriminate between all potential transfers and those who would never transfer. The group also concluded that, despite these limitations, the methodology should measure as accurately as possible the trends in transfer over time to determine whether the rate is increasing or decreasing and, ideally, yield useful insights into reasons for change.

The selection of a methodology began with a critical evaluation of different transfer rate methodologies. These rates represent measures currently in use at institutions, described in the research literature, or measures suggested by the systemwide Chancellor's Office of the California Community Colleges. (They are summarized in Appendix A.) Four measures of validity were employed to rank the several methods, and they were:

Construct validity

The rate should accurately reflect the theoretical concept it is supposed to measure; that is, the proportion of transfers that emerge from a cohort of new California Community College students with the potential to benefit from pursuing the transfer curriculum. (Low validity was assigned to measures where the rate's denominator, the "transfer pool", was diluted by non-transfer bound students and did not therefore represent a reasonable pool of potential transfers.)

Group equivalence

The rate's numerator and denominator are each based on the same pool of students. (Low validity was assigned to measures with community college first-time freshmen in the denominator, but first-time freshmen plus other entrants in the numerator.)

Time equivalence

The numerator and denominator both have the same year of origin. (Low validity was assigned to measures where the denominator represents new entrants from one origin-year, but the numerator represents transfers from multiple origin-years.)

Maturation validity

The observation period must allow enough time for students to naturally "mature" from new entrants to successful transfers. (Low validity was assigned to measures assuming only two or three years from matriculation at a community college to transfer to a baccalaureate-conferring institution.)

An initial assessment of the methods examined by the work group indicated that those which employ a longitudinal (following a cohort over time) approach are more effective than those which employ a cross sectional (looking at a given group at one point in time) approach. Of the cross-sectional approaches examined, that of Minicucci, Berman and Weiler (1989) appears to be useful in limited situations. The strength of this cross-sectional methodology is the use of three-year averages in the numerator and denominator, where each average represents students from year t , $t + 1$, and $t + 2$. (Its overall level of validity would be higher if the denominator were lagged by at least one year to allow time to transfer.) Nevertheless, the Task Force believed that too many denominator problems are still present to consider it for use on a statewide basis in California. The primary concern regarding validity is its insensitivity to enrollment growth. (It is unlikely that an amended version of this rate would accurately detect improvement in the transfer function during periods of sustained growth in new community college enrollments. For a cross-sectional transfer rate to monitor usefully changes in student flow, a valid denominator would have to emerge from empirical analysis. This subject has yet to be explored by researchers.)

Among the longitudinal rate methodologies considered by the Task Force, the Transfer Assembly rate specified by Cohen and Brawer (1990) was judged the most useful. It is a longitudinal measure that compares the number of students who transfer to the pool of students who earned at least 12 community college-credit units within a four-year period after matriculation to California Community Colleges. The 12-unit requirement, which confines the rate's denominator to students who behaviorally demonstrate pursuit of the transfer curriculum and who show some potential for completing the transfer curriculum, enhances the rate's construct validity; and its longitudinal nature guarantees group- and time-equivalence validity.

Despite the Transfer Assembly rate's high ranking, two concerns emerged. The first concerns maturation validity. The Transfer Assembly approach tracks students for four years and not beyond. This four-year interval might be appropriate for transfers to the University of California and many AICCU institutions, but it is not appropriate for many transfers to the California State University. For example, CSU enrollment figures suggest at least half of the new CSU transfers from community colleges take longer than four years to move from community college to the university.

The second problem area concerns the construct validity or the selectivity of the Transfer Assembly rate's denominator. At issue is how well does earning at least 12 community college-credit units in four years isolate potential transfers from students who do not have transfer potential? The 12-unit in four years criterion is a step in the right direction, but it may be too inclusive to adequately represent students with transfer potential.

In addressing these concerns, the Data Needs Task Force considered whether the number of earned units should be increased or decreased, whether the timeframe for earning units should be shortened, or whether expressed intentions to transfer should be added to the definition of the transfer pool. The group consensus was to modify the Transfer Assembly rate by amending both the denominator and numerator. In the denominator the number of transferable units earned was changed to six (compared to twelve), and was defined as CSU or UC transferable units. The length of time to obtain those units was changed to one year (compared to four), and the numerator was amended to provide for an open-ended transfer interval.

The California Consensus Methodology for determining the transfer rate proposes to follow a cohort of students who entered California Community Colleges as first-time freshmen and earned six or more UC or CSU transferable units during their first college year. The transfer pool, thus defined, constitutes the denominator for the transfer rate calculation. The denominator figure is more inclusive than one composed of students who achieved 12 units in one year which was the initial proposal of the Task Force. Additional consultation, however, led to the conclusion that 12 units might be too restrictive, given the part-time attendance of many community college students and the need many have to take preparatory, non-transferable courses at the outset of their work. By the same token, the six unit rule in one year is assumed to be less inclusive than the pool which results from the Transfer Assembly method.

The transfer students, or the numerator, are defined as members of the transfer pool who became either new UC, CSU, or independent college or university undergraduates who met the system's or college criteria for transfer admission and are defined as community college entrants. (These criteria are summarized in Appendix C.)

There was also agreement that data should be collected to determine whether stated intent to transfer proves significant as a predictor of actual transfer. As a component of the Consensus Methodology another measurement will be made of the freshman cohort of new California Community College students who earn six or more transferable units during their first college year and who also stated at entry their intent to transfer. Contrasting this latter measurement with the former rate should indicate whether students' intent-to-transfer is significantly correlated with actual transfer.

For each cohort to be observed, annual transfer rates will be calculated over successive years beginning one year after they enter the California Community Colleges. As a result, "time-to-transfer" eventually will be revealed by the data; that is, we will know what proportion of California Community College students transferred after one year, two years, three years, five years, etc. The monitoring of selected cohorts will continue until the annual number of transfers becomes negligible. (The drop-off is expected after seven or eight years.)

The specific data elements and data requirements for the Consensus Methodology rate are expressed as the following proportions:

Method 1 - Rate with Objective Denominator.

$$\frac{\text{Sum of Transfers from the Transfer Pool Years } t + 1 \dots t + n}{\text{First-Time CCC Freshmen at Year } t \text{ with 6 or more Transferable Units}}$$

Where:

1. The denominator (transfer pool) equals a pre-identified community college cohort enumerated at fall term, where t represents the year of entry.

2. The denominator is restricted to first-time freshman CCC enrollments for the fall term. (Students with bachelor's degrees, previous college credits or concurrently attending four-year colleges and universities are excluded.)
3. Students must have earned a minimum of 6 UC or CSU transferable semester units (or equivalent quarter units) during their first year of community college attendance. (It should be noted that acceptance of courses varies among the 68 independent institutions. In most cases, however, courses transferable to UC or CSU will also transfer to independent institutions.)
4. The numerator equals the sum of transfers from $t + 1$ to $t + n$ years, with n representing the last observed year. Transfers are defined as students attributed to the community colleges by UC or CSU. They will include students who transfer at any point in the academic year.

Method 2 - Rate with Objective/Subjective Denominator.

Sum of Transfers from the Transfer Pool at Years $t + 1 \dots t + n$
First-Time CCC Freshmen at Year t with 6 or more Transferable Units and stated
intent to Transfer

Where:

1. All of the requirements of Method 1 apply.
2. The denominator is limited to individuals who state at entry that their academic objective is to transfer.

The Consensus Methodology will capture a significant portion of transfers, but not all. Students who transfer out-of-state will be absent from the numerator; and, at the outset, some who transfer to independent California institutions will also be absent. (Current plans, as developed by the Association of Independent California Colleges and Universities, call for the exchange of student cohort data between the California Community Colleges and six selected independent colleges and universities. These six institutions [Loyola Marymount University, National University, University of the Pacific, University of San Diego, University of San Francisco, and the University of Southern California] are responsible for over fifty percent of the transfer students in the independent sector. It is expected that in subsequent years the data exchange will be attempted with the remaining fifty-eight independent colleges and universities.)

The Consensus Methodology does not monitor the following: 1) The so-called "reverse transfer function" in which students move from senior institutions to community colleges; 2) California Community College students who began their college careers elsewhere and transferred to the

CCC; 3) students who the four-year institutions define as first-time freshman entrants¹ or transfers from other institutions.² Nevertheless, most of the 60,000 students who begin college at a CCC and then transfer to California senior institutions will be accounted for.

Operationally, the incidence of transfer will be determined by matching CCC cohort enrollments with new undergraduate transfer enrollments at the UC, CSU, and independent institutions. The first group to be tracked will be the fall 1990 cohort of CCC first-time freshmen. The matching process will begin in spring 1992 on a trial basis. This exercise will look at individuals who transfer after only one year. It is anticipated that the first comprehensive report on the transfer rate of the 1990 cohort will be available in 1995.

The annual process, as currently envisioned, calls for the CCC systemwide office to start the matching process each January by providing the AICCU, UC and CSU systemwide offices with files containing one record for each student meeting the cohort specification for the prior academic year. The file will contain student identifiers, birth date, gender, ethnicity, intent-to-transfer, and transferable units completed. The UC, CSU, and the independent college offices will then match records with their new student enrollment files. Care will be taken that the research process is consistent with state and federal privacy laws. The annual process is completed when each segment has access to a single file containing all the matched records, the segments agree to the accuracy of the derived transfer rate, and specified supplemental analyses have been completed.

The Research Agenda

Taken alone, data regarding the transfer rate will only provide a gross assessment of the health and progress of the transfer function in California; but when the rate is coupled with data such as ethnicity, years to transfer, and the like, significant perspectives can be provided which will be useful for targeting outreach and retention efforts as well as program evaluation at both the community college and the receiving institutions. In addition, certain kinds of cross-sectional data will be useful, such as basic enrollment data that distinguishes between first-time freshmen and continuing students at community colleges; numbers of new community college students already holding the baccalaureate, and numbers of CCC students earning less than six transferable units in their first year.

¹ Some UC-bound students enroll in CCC classes during high school or during the summer prior to UC matriculation. These students are counted as first-time freshmen by UC.

² Supplemental analysis will evaluate the impact of segmental definitions on the transfer rate.

A research agenda beyond the transfer rate issue is currently the subject of Task Force discussion. This discussion focuses not only upon data flowing from community colleges, but also data which can be provided to community colleges for program improvement and evaluation. Research questions and data availability are under consideration on subjects such as:

- Characteristics of the transfer pool beyond those encompassed in the Consensus Methodology.
- The rates at which students progress toward eligibility to transfer to the senior segments, public and independent.
- Distinguishing characteristics of students who transfer quickly compared to those who take a long time; characteristics of successful transfers.
- Differences among ethnic groups in transfer patterns.
- Characteristics of transfer students who are most likely to persist to a baccalaureate.
- Factors leading to drop-out after transfer and before degree completion.
- The effectiveness of transfer support programs at both the sending and the receiving institutions.

An important element to be addressed in the coming months is student retention and persistence prior to transfer as well as after transfer. In order to explore this topic, Community Colleges would need to monitor the retention of students from the transfer pool to explore the factors contributing to successful transfer. Similarly, senior institutions would need to collect data on the progress of students coming to their institutions as transfers to the point of degree completion. The scope and detail of these steps are part of the research agenda and will be the subject of further discussions within the Data Needs Task Force.

The agenda is long and complex. Consensus on a base-line data transfer rate methodology is the first and very significant step in long-term collaboration designed to produce studies and research which will inform policy making regarding the transfer function.

Transfer remains one of the major elements of the California Master Plan and is receiving even more emphasis in the current stringent economic situation. Consequently, there is a need for a concerted effort to implement the Consensus Methodology described in this report and to continue to pursue the broad research agenda concerning the transfer function.

ALTERNATIVE MEASURES OF THE TRANSFER FUNCTION

1. *"Traditional" Cross-Sectional Definition (1989 CSU Abstract)*

$$\frac{\text{Transfers in Year } t + 1}{\text{Total Credit Enrollment Year } t}$$

2. *Transfer Assembly (Cohen, and Brawer, March 1990)*

$$\frac{\text{Sum of Transfers in Years } t + 1, t + 2, t + 3, t + 4}{\text{New Entrants in Year } t \text{ with 12 or more College-Credit Units}}$$

This is a cohort measure. The numerator includes only those students who subsequently enrolled at a four-year institution. The denominator includes only those without previous college experience, who earned 12 or more college-credit units during a four-year period.

3. *Effective Transfer Rate (Berman & Weiler Associates, November 1989)*

$$\frac{\text{Transfers in Year } t}{\text{Leavers in Year } t}$$

Leavers are students who are not enrolled in a CC at year t , but were enrolled at $t - 1$. The denominator excludes students with BA/BS, or who are on leave from or concurrently attending a 4-year university. Students must also have accumulated 6 or more units before leaving.

4. *Transfer Center Project Evaluation -- Cross-Sectional Rate (Berman & Weiler Associates, August 1989)*

$$\frac{\text{Average Number of Transfers in Years } t, t + 1, t + 2}{\text{Average Total Credit Enrollment in Years, } t, t + 1, t + 2}$$

5. *Cohort Measure (Lee and Frank, 1990)*

$$\frac{\text{Number of Transfers in Years } t + 1, t + 2, t + 3, t + 4}{\text{HS Graduates in Year } t \text{ Enrolling at CC}}$$

This was a cohort rate applied to transfers at the City University of New York.

6. CCC Chancellor's Office Rates (C. McIntyre, 1990)

Rates (a) and (b) are assessed for two types of data, first cross-sectional then longitudinal.

a. *Transfer Objective*

Transfers in Year t
First-Time Entrants w/Transfer Objective in Year $t - 3$

b. *High School Graduates*

Number of Transfers in Years t
HS Graduates Enrolling at CC in Year $t - 3$

c. *Full-Time*

Transfers in Year t
Full-Time Enrollment in CC in Year $t - 2$

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SEGMENTAL DEFINITIONS OF TRANSFER

California State University

Definition of a Transfer Student

The California State University defines an undergraduate transfer student as one who has generally completed 12 or more transferable units and meets the requirements for transfer admission. Students with less than 60 transferable semester units are coded as lower division transfers and those with 60 or more semester units are coded as upper division transfers.

In very few instances, students who have slightly more than 12 transferable units may be coded as first-time freshmen, provided they meet freshman admission requirements. Generally, this applies to students who are beginning their CSU studies the fall term following high school graduation, where some of their transfer units were used to satisfy a high school graduation requirement or were earned through advanced placement examinations.

Coding of Institution of Origin

The institution of origin for students who are admitted as undergraduate transfers is defined as the college or university where the student completes the most transferable units.

University of California

Definition of a Transfer Student

The University defines a transfer applicant as a student who is a high school graduate and has been a registered student in a college or university (or in college-level extension classes) following high school graduation. Summer session attended immediately following high school graduation is excluded in this determination.

Coding of Institution of Origin

The University seeks to attribute students to the one institution that was most responsible for establishing UC eligibility. If there is no such school (e.g., if the student is admitted in exception to eligibility requirements), then the student is attributed to the last school attended.

The rules for establishing which school was most responsible for establishing UC eligibility are complex. Due to their complexity, the University is currently reviewing their process.

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